

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference INT00110D	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NO00/00219	International filing date (day/month/year) 22.06.2000	Priority date (day/month/year) 23.06.1999
International Patent Classification (IPC) or national classification and IPC ₇ G 02 F 1/01		
Applicant Optoplan AS et al		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>3</u> sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of _____ sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>

Date of submission of the demand 02.01.2001	Date of completion of this report 22.05.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Sture Elnäs/MN Telephone No. 08-782 25 00

Form PCT/IPEA/409 (cover sheet) (January 1998)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NO00/00219

I. Basis of the report

1. With regard to the elements of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement) under article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NO00/00219

**V. Reas ned statement under Article 35(2) with regard t novelty, inventive step or industrial applicability;
citations and explanati ns supporting such statement****1. Statement**

Novelty (N)	Claims	<u>1-13</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-13</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-13</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The claimed invention relates to a method and an assembly for elimination or reduction of signal fading in optical interferometer networks.

The invention is intended to solve the problem of polarization induced signal fading, and where the method can be used to interrogate WDM, TDM or SDM networks.

The solution according to the invention comprises modulating the polarization state, receiving the signals from different paths and processing by determining the phase difference between the signals.

Documents cited in the International Search Report:

US 5173743
US5351124
US4897543

The cited documents describe fiber optical interferometers with polarization fading control.

However, none of the documents describe a device for reduction of signal fading by determining the phase difference as defined in the claims.

Accordingly, the claimed invention fulfils the requirements of novelty (N), inventive step (IS) and industrial applicability (IA).

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

To:

ABC-PATENT SIVILING. ROLF CHR. B.
LARSEN A.S
Brynsveien 5
N-0667 Oslo
NORVÈGENOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

Date of mailing (day/month/year) 28 December 2000 (28.12.00)		IMPORTANT NOTICE	
Applicant's or agent's file reference INT00110D			
International application No. PCT/NO00/00219	International filing date (day/month/year) 22 June 2000 (22.06.00)	Priority date (day/month/year) 23 June 1999 (23.06.99)	
Applicant OPTOPLAN AS et al			

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
AG,AU,BZ,DZ,KP,KR,MZ,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CR,CU,CZ,DE,DK,DM,EA,EE,EP,ES,FI,GB,GD,
GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,
NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
28 December 2000 (28.12.00) under No. WO 00/79335

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer J. Zahra Telephone No. (41-22) 338.83.38
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 00/00219

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G02F 1/01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5173743 A (B.Y.KIM), 22 December 1992 (22.12.92), figure 2, abstract --	1-13
A	US 5351124 A (LASKOSKIE ET AL), 27 Sept 1994 (27.09.94), figure 2B, abstract --	1-13
A	US 4897543 A (A.D.KERSEY), 30 January 1990 (30.01.90), figure 4, abstract -- -----	1-13

☐

Further documents are listed in the continuation of Box C.

☒

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

19 October 2000

Date of mailing of the international search report

24 -10- 2000

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Sture Elnäs /itw

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

Information on patent family members

03/10/00

International application No.

PCT/NO 00/00219

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	5173743	A	22/12/92	NONE	
US	5351124	A	27/09/94	NONE	
US	4897543	A	30/01/90	NONE	

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION CONCERNING
SUBMISSION OR TRANSMITTAL
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

ABC-PATENT
Siviling, Rolf Chr. B. Larsen A.S
Brynsveien 5
N-0667 Oslo
NORVÈGE

Date of mailing (day/month/year) 28 July 2000 (28.07.00)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference INT00110D	
International application No. PCT/NO00/00219	
International publication date (day/month/year) Not yet published	
International filing date (day/month/year) 22 June 2000 (22.06.00)	Priority date (day/month/year) 23 June 1999 (23.06.99)
Applicant OPTOPLAN AS et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, **the attention of the applicant is directed to Rule 17.1(c)** which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, **the attention of the applicant is directed to Rule 17.1(c)** which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
23 June 1999 (23.06.99)	19993135	NO	03 July 2000 (03.07.00)

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer Athina Nickitas-Etienne Telephone No. (41-22) 338.83.38
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KOP1 til orientering

1/4

PCT REQUEST

Original (for SUBMISSION) - printed on 22.06.2000 02:17:55 PM

INT00110D

0	For receiving Office use only	
0-1	International Application No.	PCT/NO 00 00219
0-2	International Filing Date	22 JUNI 2000 (22.06.00)
0-3	Name of receiving Office and "PCT International Application"	 PATENTSTYRET Styret for det industrielle rettsvern ► PCT International application
0-4	Form - PCT/RO/101 PCT Request Prepared using	PCT-EASY Version 2.90 (updated 10.05.2000)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	Norwegian Patent Office (RO/NO)
0-7	Applicant's or agent's file reference	INT00110D
I	Title of invention	ELIMINATION OF POLARIZATION FADING IN UNBALANCED OPTICAL MEASURING INTERFEROMETERS
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	OPTOPLAN AS
II-5	Address:	Boks 1963, Moholtan N-7448 Trondheim Norway
II-6	State of nationality	NO
II-7	State of residence	NO
III-1	Applicant and/or inventor	
III-1-1	This person is:	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	RØNNEKLEIV, Erlend
III-1-5	Address:	Sig. Jorsalfars v. 23b N-7052 Trondheim Norway
III-1-6	State of nationality	NO
III-1-7	State of residence	NO

PCT REQUEST

INT00110D

Original (for SUBMISSION) - printed on 22.06.2000 02:17:55 PM

IV-1	Agent or common representative; if address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name	ABC-PATENT, SIVILING. ROLF CHR. B. LARSEN A.S
IV-1-2	Address:	Brynsveien 5 N-0667 Oslo Norway
IV-1-3	Telephone No.	22 07 19 50
IV-1-4	Facsimile No.	22 07 19 55
IV-1-5	e-mail	abc-patent@abc-patent.no
V	Designation of States	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW MZ SD SL SZ TZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH&LI CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

PCT REQUEST

INT00110D


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V-5	Pr cautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	Exclusion(s) from precautionary designations	NONE	
VI-1	Priority claim of earlier national application		
VI-1-1	Filing date	23 June 1999 (23.06.1999)	
VI-1-2	Number	1999.3135	
VI-1-3	Country	NO	
VI-2	Priority document request The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s):	VI-1	
VII-1	International Searching Authority Chosen	Swedish Patent Office (ISA/SE)	
VII-2	Request to use results of earlier search; reference to that search		
VII-2-1	Date	23 June 1999 (23.06.1999)	
VII-2-2	Number	1999.3135	
VII-2-3	Country (or regional Office)	NO	
VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	13	-
VIII-3	Claims	4	-
VIII-4	Abstract	1	optoplal.txt
VIII-5	Drawings	4	-
VIII-7	TOTAL	26	
	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-8	Fee calculation sheet	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-17	Other (specified):	Office action of 19.01.00	-
VIII-18	Figure of the drawings which should accompany the abstract	1	
VIII-19	Language of filing of the international application	English	

PCT REQUEST

INT00110D

Original (for SUBMISSION) - printed on 22.06.2000 02:17:55 PM

IX-1	Signature of applicant r ag nt	
IX-1-1	Name	ABC-PATENT, SIVILING. ROLF CHR. B. LARSEN A.S
IX-1-2	Name of signatory	Dag Thrane
IX-1-3	Capacity	Patent agent

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	22 JUNI 2000 (22.06.00)
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	Received
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	
10-5	International Searching Authority	ISA/SE
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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1
INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 00/00219

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G02F 1/01

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

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Further documents are listed in the continuation of Box C.

☒

See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search

19 October 2000

Date of mailing of the international search report

24 -10- 2000

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Sture Elnäs /itw

Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT
Information on patent family members

03/10/00

International application No.
PCT/NO 00/00219

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	5173743	A	22/12/92	NONE	
US	5351124	A	27/09/94	NONE	
US	4897543	A	30/01/90	NONE	

1
INTERNATIONAL SEARCH REPORT

International application No.

PCT/NO 00/00219

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According to International Patent Classification (IPC) or to both national classification and IPC

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

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Date of the actual completion of the international search

19 October 2000

Date of mailing of the international search report

24-10-2000

Name and mailing address of the ISA/
Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Sture Elnäs /itw
Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT
Information on patent family members

03/10/00

International application No.
PCT/NO 00/00219

Patent document cited in search report			Publication date	Patent family member(s)	Publication date
US	5173743	A	22/12/92	NONE	
US	5351124	A	27/09/94	NONE	
US	4897543	A	30/01/90	NONE	

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference INT00110D	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/NO00/00219	International filing date (<i>day/month/year</i>) 22.06.2000	Priority date (<i>day/month/year</i>) 23.06.1999
International Patent Classification (IPC) or national classification and IPC ₇ G 02 F 1/01		
Applicant Optoplan AS et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 02.01.2001	Date of completion of this report 22.05.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Sture Elnäs/MN Telephone No. 08-782 25 00

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NO00/00219

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed
- ☐ the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the claims:
pages _____, as originally filed
pages _____, as amended (together with any statement) under article 19
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the drawings:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheet/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/NO00/00219

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	<u>1-13</u>	YES
	Claims		NO
Inventive step (IS)	Claims	<u>1-13</u>	YES
	Claims		NO
Industrial applicability (IA)	Claims	<u>1-13</u>	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The claimed invention relates to a method and an assembly for elimination or reduction of signal fading in optical interferometer networks.

The invention is intended to solve the problem of polarization induced signal fading, and where the method can be used to interrogate WDM, TDM or SDM networks.

The solution according to the invention comprises modulating the polarization state, receiving the signals from different paths and processing by determining the phase difference between the signals.

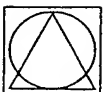
Documents cited in the International Search Report:

US 5173743
US5351124
US4897543

The cited documents describe fiber optical interferometers with polarization fading control.

However, none of the documents describe a device for reduction of signal fading by determining the phase difference as defined in the claims.

Accordingly, the claimed invention fulfils the requirements of novelty (N), inventive step (IS) and industrial applicability (IA).



NORSK GRANSKINGSRAPPORT Patentsøknad nr.
NORWEGIAN SEARCH REPORT Patent application no.

1999 3135

Kategori/ Category*	Anførte publikasjoner: Cited documents:	Relevant mot krav Relevant to claim(s)
A, D	US 4,932,783 (Hele dokumentet)	
A	US 4,897,543 (Hele dokumentet)	
A, D	US 5,173,743 (Hele dokumentet)	
A	US 5,104,222 (Hele dokumentet)	
A	Optical Fiber Sensors 1988. Technical Digest Series, Vol. 2., Conference Edition p.I/44-7, Washington, Opt. Soc. America, Washington DC, USA, 1988, Kersey, A. D. et al., "Elimination of polarization induced signal fading in interferometric fiber sensors using input polarization control"	
A	Proceedings of SPIE – The International Society for Optical Engineering Conference, Vol. 3478, s. 385-92, SPIE-Int. Soc. Opt. Eng., Washington DC, USA, 1998, Xiaodong Zhou et al., "Polarization fading elimination of interferometric fiber-optic arrays by input polarization control".	
*Dokumentkategori: X: særlig relevant alene Y: særlig relevant dersom det kombineres med annet dokument i samme kategori A: bakgrunnsteknikk D: anført i beskrivelsen E: dokument med tidligere prioritet (PL § 2.2.3) &: publisasjon i samme patentfamilie		*Category of cited document: X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background D: document cited in the application E: earlier patent document, but published on, or after the filing date &: member of the same family

Rapport utferdiget/date of report: 2000.01.10 av/by Jan Ove Askautrud

